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GENDER AND INDIGENOUS KNOWLEDGE SYSTEMS AND SUSTAINABLE DEVELOPMENT*

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INTRODUCTION

Environmental education is essential for promoting sustainable development practices and strategies. Potentially, it may affect the choices various stakeholders, policy makers and managers make that affect the environment. Further, it is important for enforcement of the law in that it could affect the decisions the police make about prosecuting and their efficiency. Similarly, the perspective of the court affects how they interpret the law and their sentencing practice.[1]

Sound policy, programme formulation processes, planning and managerial practice that are able to address the social, economic and environmental objectives of sustainable development are essential. It is important for environmental education initiatives to challenge views currently held by policy makers, planners and enforcement agencies as well as to complement their knowledge base so as to promote better planning and management. Both Indigenous Knowledge Systems (IKS) and gender are sorely neglected factors in decision making and policy formulation. This may be attributed to many factors including Zimbabwe's political history, existing gender relations, the institutional framework and the planning and managerial framework. This paper examines the significance of gender and IKS in the creation of such strategies. It seeks to locate rural women in the development scenario and to specifically identify their interests and values. Thus, it explores the relationship of rural women to knowledge systems and defines them as critical stakeholders.

The approach of this paper to education moves away from pure description and views it as being about giving people the basis to question current practice or attitudes and to develop these. The paper begins by examining the issue of development and identifying its key components in Zimbabwe. It describes the significance of IKS and women for the development processes and then identifies key issues/factors that undermine this. It seeks to demonstrate the importance of recognising the role of women in resource conservation and development as well as the significance of their knowledge for policy and managerial decision making. These areas are, therefore, the critical areas of intervention in environmental education. On this basis certain key issues are then identified that need revisiting — and are themselves critical points for environmental education. Finally, it identifies issues that need to be addressed.

SUSTAINABLE DEVELOPMENT

Development is perhaps the single most important goal for Zimbabwe. If development is to be successful, it needs to address economic, social and environmental objectives. This

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1 See, for example, the attitude of the courts to wildlife management in Mohamed-Katerere (1996) and to water resources in Mohamed-Katerere (1995).

has been dubbed "sustainable development". In the Zimbabwean context, economic growth, the creation of institutional and economic efficiency and social equity are critical aspects of sustainable development. The concept denotes not just the existence of a development framework that is environmentally sustainable but one that prioritizes human sustainability (Gore *et al* 1993). Human sustainability is understood to be about the fulfilling of people's cultural, material and spiritual needs in equitable ways and not simply about survival (Dalal-Clayton, 1994, 4). Further, the inter-relationship between human and environmental sustainability needs to be appreciated. Sustainable development speaks of the collective aspirations of people and must necessarily be assessed through the achievement of performance indicators other than economic ones, such as the Gross Domestic Product. Development needs to address a multiplicity of factors critical to human well being and thus is concerned not only with education and social welfare but also issues of governance (Hyden, 1994, 22). Thus development is concerned not only with outputs but also processes (Katerere and Mohamed-Katerere, 1996). It posits civil society not simply as the beneficiaries of development but as actors in the development process. Development is thus about the mechanisms and procedures of decision making and is meaningful to people where they have the opportunity to wrestle with defining the relationship between the end and the means (Hyden, 1994, 23). The need for such development processes stems from the now widely accepted realisation that unless development initiatives are locally driven they will fail. Redclift (1992), in Dalal-Clayton (1994), captures this consensus:

> Sustainable development may be defined by people themselves to represent an ongoing process of self realisation and empowerment . . . and that the 'bottom line', in practical terms, is that if people are not brought into focus through sustainable development, becoming both the architects and engineers . . . then it will never be achieved anyway, since they are unlikely to take responsibility for something they do not 'own' themselves.

On this basis, people, their values and interests are key components of development.

Various international agreements concerned with environment, particularly those adopted at UNCED and beyond, have echoed this kind of perception about development. The policy framework created under the Rio Declaration and the international programme of action, Agenda 21, prioritises developments that are people-driven. For example, Principle 10 of the Rio Declaration provides that:

> Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities and the opportunity to participate in decision making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

These agreements, as well as the problem focused conventions (*Convention on Biological Diversity, Framework Convention on Climate Change* and the *Convention to Combat Desertification*) and non binding agreements (the *Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests*) specifically recognise the special position of indigenous people, women and indigenous knowledge in development. For example, Agenda 21 provides in Chapter 26 that:

> Indigenous people and their communities have a historical relationship with their lands and . . . have developed over many generations a holistic traditional scientific

> knowledge of their lands, natural resources and environment . . . national and international efforts to implement environmentally sound and sustainable development should recognise, accommodate, promote and strengthen the role of indigenous people and their communities.

The Government of Zimbabwe has formally committed itself to a policy of Sustainable Development (Government of Zimbabwe, 1987). It is, however, unclear how exactly this term is understood. Environment has clearly been identified as being a critical factor in its realisation. However, the issue of process has been neglected. Various evidence suggests that the development approaches of the state are output driven rather than process focused. Further development is seen as the prerogative of the state. This is particularly evident at the local government and administrative levels, where, for example, the distribution and investment of earnings of development initiatives are believed to be best done by the state.[2] This stems, in part, from the belief that institutions of civil society, unlike the state, are not representative[3] and also that poor structures of accountability exist.[4] Katerere and Mohamed-Katerere (1996) and Mohamed-Katerere (1996) on the basis of interviews within the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) sector come to the conclusion that even such developments that were designed as participatory are essentially output driven. It is the attitude and perspective of key institutions and policy makers that sets the basis for not just interventionist approaches but also command and control systems that are poorly linked to local value systems. It is essential, therefore, that education initiatives are also directed at this audience.

WOMEN AND CONTEMPORARY IKS SYSTEMS

It is important to try and understand IKS in their own terms and not transpose another system of organisation on it.

Indigenous Knowledge Systems are dynamic and developing systems of local knowledge rooted in the socio-economic history of a given community and are reflective of their social values. Indigenous knowledge is not static or necessarily antiquated. They are locally appropriate systems of management that evolve in response to changing circumstances and hence define management practices that are locally accepted.

At a national level, IKS systems have been important in conserving natural resources. They have created sacred sites and other protected areas, rules of use and exclusion, processes for mitigating between different kinds of interests. The system of organisation appears to be significantly different from formal state systems and incorporates a series of inter-related objectives in defining resource use, including spiritual, technical, ecological, medicinal, aesthetic, economic, food management, and shelter. Thus it appears that the essence of the rule system is function and process based (Mohamed-Katerere, 1995).

An interesting difference from the formal legal system is that there appears to be no fixed hierarchy of objectives, for example, economic interests over ecological ones. Instead, these functions were equally acknowledged within the customary legal system and treated as

2 Personal Communication with Chikati, Chief Executive Officer of the Association of Rural District Councils, March 1996 and Makombe, Acting Director, Department of National Parks and Wild Life Management, September 1996.

3 Personal Communication with Makombe, Acting Director, Department of National Parks and Wild Life Management, September 1996.

4 Personal Communication with Chikati, Chief Executive Officer of the Association of Rural District Councils, March 1996.

complementary as opposed to antagonistic. Thus nature and the environment are conceptualised not as objects to be controlled and utilised simply for human interest but as a productive system in its own right. Thus, restrictions on how natural resources and land are utilised exist. Significant limitations include the obligation to leave certain species of trees within agricultural fields or to protect and limit human activities within certain areas. Rules are often, although not exclusively, formulated in spiritual terms. These rules may in fact be of sound scientific basis. An example would be that the removal of all the trees around a homestead causes lightening to strike (Clarke, 1994). This is in striking contradistinction to the formal system of management where, for example, the philosophy or objective behind individual pieces of legislation tends to be very narrow. The Water Act, for example, manages water primarily in terms of its economic function. Its primary objective is the optimum utilisation of water, which is interpreted to include availability and beneficial economic use. Similarly, the philosophy behind establishing conservation areas (*Parks and Wild Life Act*/some aspects of the *Forest Act*) is to exclude use. We need to contextualise women within these indigenous systems and development.

Women have a central role in sustainable development as at the local level they are the primary resource users and hence *de facto* managers. Women in rural economies in Zimbabwe have key roles as food producers and managers, nurturers and medical experts and as custodians and producers of knowledge. Women need to be identified as independent stakeholders in IKS and development processes given their role within livelihood systems and the inter-relationship between groups at a local level.

Their role within indigenous knowledge systems as custodians of particular types of knowledge is particularly important. This special position of women is inadequately provided for as the complexity of local knowledge systems has not been well understood and hence does not feature adequately in the solutions posed. The issue of custodianship and rights to knowledge is generally misunderstood. Knowledge is seen as the forte of the community as a whole and the diversity within these communities and the peculiar roles and functions of different groups are not acknowledged. The exception to this is the FAO concept of Farmers Rights. An important shortcoming is that the special place of women as custodians and producers of such knowledge is not addressed. Women are the custodians of medicinal and nutritional knowledge. This knowledge has been appropriated by industry without prior informed consent, technologically modified and returned to women as pharmaceutical products. The critical issue facing us today is whether women need this kind of independent recognition. In particular, the various levels and kinds of knowledge and rights need to be addressed. Some knowledge such as that pertaining to herbal uses or germ plasm may be shared by a community or it may be located within a specialised group or individual.

Women are the majority of farmers and similarly have much knowledge about locally appropriate farming practices. Women in Zimbabwe traditionally cultivated small grains, a diversity of crops and adopted certain agricultural practices such as leaving trees in the field to ensure proper soil fertility. Agricultural policy in Zimbabwe as in much of Africa belittled these local practices and encouraged the planting of single cash crops. This has led to food security problems in the rural areas. Women bear the brunt of this as they are responsible for providing food, looking after the sick and ensuring the general well being of the family. This crisis is aggravated by the loss of access to wild fruits and bush meat in protected areas.

There is increasing evidence, for example the findings of the Land Tenure Commission (1995), that suggests that the failure to support local management systems is a key

contributory factor to the severe problems of sustainable land and natural resource management that Zimbabwe faces. Further, it is now widely accepted at both the international and national levels that indigenous knowledge systems hold important insights for natural resource management, appropriate technological development, food security and medicine amongst other things. Contemporary management, policy and education strategies need to address this failure.

As a result of the colonial objective to gain effective control over land and natural resources, IKS are poorly acknowledged in the Zimbabwean legal, policy and managerial framework. A key aspect of this was the undermining and invalidation of local decision making systems, the methods and structures of social, economic and political organisation and management systems (Mohamed-Katerere, 1995). The formal environmental management systems created by the State treated indigenous knowledge systems as backward and antiquated and hence these systems were marginalised. This subjugation took place at a multiplicity of levels: formally and intentionally through, for example, the imposition of colonial legal systems and institutions; and informally, through the imposition of a knowledge system, cultural domination education and Christianity amongst other things (Mohamed-Katerere, 1995). Additionally, local knowledge systems were further undermined by the early conservationist movement and the private sector. Agri-business and government aggressively promoted western agricultural systems (Mushita, 1993). This resulted in a monocultural farming trend and the loss of indigenous genetic resources (van Oosterhout, 1993).

ENVIRONMENTAL EDUCATION INITIATIVES

The effectiveness of IKS and women within this system is dependent on its effective operation. It is important, therefore, for education initiatives to tackle the impediments to its success. Local knowledge systems and women's management systems have been undermined in various ways:

Tenure Systems: The creation of new forms of tenure is perhaps the most significant of these. In the Communal Areas of Zimbabwe all resources belong to the state, inhabitants simply have a right to use these resources for their immediate domestic purposes. They are generally excluded from obtaining economic benefit from these resources. This transfer of ownership from community to the state stemmed from misunderstanding the concept of common property. Common property is controlled by a group. In these areas, complex rule systems existed and were enforced. These rule systems have been undermined by the legal system as it not only failed to recognise these rights but was unable to create an alternative system (rules and institutions) that could win the support of the communities. These systems have had negative implications for women particularly in terms of food management, medicinal use and the loss of important traditional sites.

Similarly, individual agricultural plots granted by the state were generally too small to allow certain traditional practices to continue. For example, both shifting cultivation and the practice of *tseu* (a woman' portion) were difficult to continue, thus undermining the position of women in the family and her ability to maintain soil fertility and hence good crop yields.

Specific Managerial Practices: Certain practices, such as wetlands cultivation, were prohibited, thus undermining local practice. Yet today, it is evident that the scientific basis of this prohibition is flawed.

Planning Systems: The institutional system created not only fails to adequately incorporate traditional leadership but has not taken into account the complexity of rights, decision making processes and conflict resolution at the local level. Thus women have through the formal structure been sidelined in the planning process.

The current intellectual property rights are designed to and are based on the western methods of knowledge production and concepts of intellectual ownership. Within this context the scientist or other individual is the producer of knowledge and such person develops, tests and applies theories or knowledge. The interaction with others is as subjects or objects of study as opposed to creators or participants. This is in contradistinction to the pursuit of knowledge within the traditional African context and hence is inappropriate in the rural context where knowledge is both the result of individual and group processes (Mohamed-Katerere, 1996). This has important implications for how we value and acknowledge women's knowledge and innovativeness at a local level. It is time to acknowledge and compensate individuals for their intellectual innovativeness. The full nature of women's knowledge in their roles as farmers, healers, food managers and care-givers needs to be acknowledged within the formal system and appropriately rewarded.

Education: The education system generally treated the local knowledge system as backward and unscientific thus effectively disempowering local communities.

Private Sector: The relationship between agri-business and local communities has important implications for sustainability at the local level. Agri-business is involved in the collection of genetic material from land and the development of so-called improved varieties, the re-export of these to the country of origin, the promotion of unsustainable monocultures and the negative labelling of indigenous crops as weeds, poisonous, etc. These have many negative consequences at the local level. For example, the drive by agri-business to agricultural monocultures has had severe implications for bio-diversity and food security at a local level. These relationships need to be redefined if these unsustainable practices are to be reversed.

Agri-business has not only attempted to secure monopoly rights over genes and genetic characteristics but also promote the regulation of certain agricultural activities to the detriment of local farmers. Agri-business, the process of validation of knowledge and government extension has had a negative impact on the status of Indigenous Technical Knowledge. In the Kenyan context, for example, women were discouraged from using indigenous crop varieties, on the grounds that these caused high levels of toxicity (Opole, 1993). These claims have been shown to be without a sound scientific basis. However, the impact at the local level has been to undermine local knowledge systems and promote food insecurity (Opole, 1993).

The use of genetic resources in industry has not only threatened food security and agricultural success but with the development of biotechnology it has increasingly threatened health and other livelihood issues. Clear standards of safety need to be developed. Women have an important interest in such codes as the burden of providing and caring for families and the elderly falls disproportionately on women.

Media/Public Images: The media and various other institutions involved in information dissemination portray negative images of woman. For example, the typical portrayal of the rural woman carrying wood on her head against the backdrop of barren land conveys to many the impression that women are irresponsible resource users. These kinds of photographs fail to acknowledge the full reality of women's situation.

Given this, there is an urgent need to reform the law so that it promotes and supports strategies for sustainable development. Recognising and supporting local values, priorities and concerns are key aspects of this. If development initiatives are to succeed they must be based on local needs and be locally driven. To achieve this, the relationship between law and social, economic and development objectives and the status of local communities needs to be re-examined, and a variety of strategies identified to address all these aspects. This is not simply about the re-writing of laws to include socio-economic or environmental objects, but also about understanding how law supports and/or undermines communities and hence development processes. Environmental education is a key aspect of this process. Target audiences would not only be policy makers and legislators but also managers and planners. Managers are important target audiences as it is through their work that legislation is given its full effect.